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### (54) **A WINDOW WITH A FRAME OF EXTRUDED PROFILE MEMBERS**

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## Description

The invention relates to a window, comprising a frame of extruded profile members which at their exterior side surfaces parallel to the glass plane have a first flange portion as a supporting member for an edge portion of a thermo pane on the external side thereof, whereas an opposite edge portion at the inside of the thermo pane is supported by a glazing bead connected with the profile member, and a main frame mainly consisting of wood profiles, the exterior surfaces of which are covered by weather-resisting coverings.

The invention mainly but not exclusively has as object windows designed as top-hinged roof windows to be installed in inclined roofs.

Windows of said type must, when openable, normally be provided with separate, robust hinge elements and motion transfer connections between the frame and the main frame; this partly causes an increase of the production costs and, partly often mars the appearance of the window.

Also, if it is desired to provide the window with accessories known per se such as a roller blind, a Venetian blind, an insect screen or the like, separate fastening and movement control members for such accessories are required.

In openable windows of this type it is known per se to use motor control for the opening/closing movement and also for said accessories, but this has usually required specially designed frame and main frame structures often with relatively complicated electrical wiring.

The primary object of the invention is to provide a window with a comparatively, simple frame and main frame structure in which the movement control members and possible driving members for the opening/closing movement of an openable window and/or accessories of the above-mentioned type in so far as is possible are integrated in the frame and main frame profiles.

A further object of the invention is to show a window structure which without significant changes of the frame and main frame profiles and in a relatively economical way can be extended from a simple design as a fixed window into an openable window either manually operated or through a further extension into an advanced structure with motor control of the opening/ closing movement and possible accessories.

In addition, a particular object of the invention is to provide a motion transfer member for use in manually operated or motor-controlled openable windows of a very simple structure and design which as little as possible disfigures the frame and main frame structures whether these are seen from the inside or outside.

According to a first aspect of the invention a window of said type is characterized in that a hinge member at the top of the window comprises an edge portion of an extruded profile member forming a hinge pivot firmly connected to the main frame portion at this side and a hook-shaped wall portion of the opposite frame profile

member forming a hinge blade, whereas at one of the other sides of the window means are provided to ensure engagement of said hinge pivot and hinge blade forming portions in the closed position of the window.

Besides avoiding cost-increasing hinge structures and motion transfer members, the hinge element directly integrated in the frame and main frame manually operated or motor-controlled openable windows of a very simple structure and design which as little as possible disfigures the frame and main frame structures whether these are seen from the inside or outside.

According to a first aspect of the invention a window of said type is characterized in that the hinge blade forming wall portion of the frame profile member comprises a flange part of the upper exterior side wall of the frame profile member which projects downwards substantially parallel to the glass plane, whereas the hinge pivot forming edge portion is formed by an upwards projecting oblique flange part of said extruded profile member which is connected with the upper side of the main frame member, said engagement ensuring means being provided solely at one of the sides of the window.

Besides avoiding cost-increasing hinge structures and motion transfer members, the hinge element directly integrated in the frame and main frame structure facilitates the mounting process inasmuch as the frame can be hooked on to the main frame structure in a simple way after the latter has been fastened in the roof opening.

Further advantages and details of this window structure appear from claims 2-15.

In the following an embodiment of the invention in the form of a top-hinged openable roof window for installation in an inclined roof is described with reference to the drawings, in which

Fig 1 is a vertical, longitudinal sectional view of the window;

Fig 2 is a transverse section at right angles to the window plane;

Fig 3 shows a coupling member according to the invention;

Fig 4 is a cross section of the coupling member shown in fig 3;

Fig 5 shows the connection between the frame and main frame in a fixed window;

Fig 6 shows an opening/closing device according to the invention;

Fig 7 shows a detail of the opening/closing device shown in fig 6; and

Fig 8 shows a main frame bottom portion ready for arrangement of an accessory motor.

In the embodiment shown in the sectional views in Figs 1 and 2 the window according to the invention comprises a frame made of extruded profile members, preferably aluminium, of which Fig 1 shows the top portion 1 and the bottom portion 2, and Fig 2 the two vertical

side portions 3 and 4.

The frame profile members 1-4 have the same basic cross section which as shown in Fig 1 can be substantially L-shaped with a first wall portion 5 parallel to the glass plane and an exterior wall portion 6 at right angles hereto connected via an oblique corner portion 7.

The first wall portion 5 comprises a flange part 8 as a supporting member for an edge portion of at the outside of a thermo pane 9 at sealing means 10.

A flange portion 11 projecting inwards at right angles to the wall portion 5 is at its free end provided with a track 12 for accommodation of a glazing bead 13, which supports the edge portion of the thermo pane 9 at the opposite side.

The glazing bead 13 is substantially L-shaped with a flange portion 14 projecting inwards at right angles to the glass plane forming a track 15 for retaining a comparatively wide sealing strip 16 for sealing between the frame and the main frame 1 in the closed position of the window.

In the drawing this sealing strip 16 is only shown in connection with the frame top portion 1 in Fig 1 and the left vertical wall portion 3 in Fig 2, but in the embodiments which comprise the sealing strip it is normally arranged in connection with all four frame profile members.

In a track 17 formed by a flange portion 18 inwards projecting from the oblique corner portion 7 a sealing strip 19 is accommodated in a corresponding manner defining the outer sealing plane of the window.

The main frame portions positioned opposite the frame profile members 1-4 in the window after installation comprise a top portion 20 and two vertical frame portions 22 and 23. The frame portions are mainly made of wood profiles 20a, 21a, 22a and 23a, the exterior surfaces of which are covered by weather-resisting coverings.

The wood profile 20a of the top portion is composed of two members which together form a duct 20b facing the thermo pane 9 which at its bottom is delimited by a metal profile member 20c projecting outwards from the wood profile and can be used to accommodate a roller blind rod 54. The weather-resisting covering here comprises an L-shaped metal profile member 24, which covers the side of the wood profile 20a facing the thermo pane 9 and part of the top side of the profile.

A likewise L-shaped metal profile member 25 is fastened to the profile member 24 and connected with an extruded profile member 26.

According to a first aspect of the invention this profile member 26 is provided with an upwards projecting oblique flange portion 27, of which an edge portion 28 of increased thickness forms a hinge pivot for engagement with flange portion 29 projecting downwards from the exterior wall portion of frame top portion 1, whereby the exterior wall portion 6 forms a hook-shaped hinge blade.

In this embodiment a hinge member which permits

opening and closing of the frame in relation to the main frame by turning around the axis defined by the edge portion 28 is designed as an integral part of the frame and main frame top portions.

The use of separate production cost increasing hinge members is thus avoided and the shown top-hinged embodiment facilitates mounting since the frame can relatively easily be hooked on to the hinge pivot forming edge portion 28 after installation of the main frame.

In the shown embodiment where the window is designed for installation in an inclined roof the profile member 26 can furthermore be provided with a flange portion 30 projecting parallel to the top side of the profile member 25 so that the surrounding, e.g. sheet-shaped sealing material can be wedged in between the flange portion 30 and the profile member 25.

As it most clearly appears from Fig 2, the flange portions 11 and 18 projecting inwards from the frame profile members form a track with a mainly square cross section, which in the vertical frame portions 3 and 4 can be used to accommodate a block shown in figs 3 and 4 which is displaceable in the track and can be retained in random position in same by means of fixing screws arranged in oblique holes 33.

The block 32 serves as a coupling member for connection of the frame either with a locking device permanently fastened to the frame portion in a fixed window or with a motion transfer member connected to an opening/closing device mounted in the main frame portion.

In a fixed window the coupling member 32 is fastened in the track 31, as shown in Fig 5, at the bottom part of the vertical frame portions and connected to an arm which is fastened to the main frame portion by means of a fitting which may be positioned beneath the weather-resisting covering.

In an openable window the coupling member 32 is fastened in the track 31 in the upper part of the frame portion.

In the embodiment shown in Fig 6 the motion transfer member consists of a curved rack 37 in engagement with an opening/closing device 39 arranged in a recess 38 in the exterior side of the main frame profile. The recess 38 is as shown designed so that it can accommodate the entire length of the curved rack 37 in the closed position of the window.

In the opening/closing device 39 the rack 37, which as shown in Fig 7 is toothed on the concave side, is in engagement with a toothed wheel 40 which via a transmission not shown is run by an electromotor with reversible direction of rotation.

Opposite the toothed wheel 40 the rack is supported by a supporting wheel 41 on its convex side.

In order to allow release of the engagement between the rack 37 and the toothed wheel 40 the toothed wheel is preferably mounted eccentrically, e.g. by an eccentric connection between its axle journal and an operating member that can be turned and which is acces-

sible from the inside of the main frame portion so that when it is turned manually the toothed wheel 40 is released from its engagement with the rack 37, for example to position 40' shown in dotted line, whereby the latter can be completely released from the main frame portion when the window is opened manually.

The special coupling member 32, which permits changing a fixed window into an openable window is not restricted to use in top-hinged windows or in connection with the integral hinge member described above. Nor is it restricted to use together with the described opening/closing device and the motion transfer member designed as a rack.

The same applies to the described embodiment of the opening/closing device and the rack, the use of which is not restricted to top-hinged windows or together with the integral hinge member or the special coupling member.

In the top-hinged window shown, the concave side of the rack 37 can be designed with such a curvature variation, e.g. as shown in Fig 7, with a curvature radius  $R_2$  on a short length of the end of the toothing closest to the coupling member 32 which is considerably smaller than curvature radius  $R_1$  on the remaining length of the rack, whereby an advantage is obtained, i.e. that the rack 37 never projects beyond the inside 122 of the main frame wood profile.

The distance from the hinge outside Fig 6 to the right to the engagement point of the rack 37 at the pivot 35 in the shown embodiment is larger than the distance from said hinge to the engagement point of the rack 37 with the toothed wheel 40. Hereby the advantage is obtained that the window frame after having reached the closing position in continuation of the closing movement is lifted briefly towards the hinged side whereby it is brought in abutment on the main frame, and sealing between the sealing strips 16 and 19 and the main frame portions abutting on same is ensured.

As it appears from Figs 1 and 2 the window can be manufactured so as to be ready for mounting of accessories such as, e.g. a roller blind, an insect screen or a Venetian blind.

The profile member 24 in the main frame top portion can thus be designed with a projecting flange portion 41 for clipping on an edge fastening member 42 at one side of a fixed insect screen 43, and the main frame side portions and bottom portions can be provided with tracks 44 for accommodation of extruded profile members 45 with projecting flange parts 46 for clipping on edge fastening members 47 at the sides and lower edge of such an insect screen.

The window can likewise already when supplied be arranged for motor control of, e.g. a roller blind as shown in Fig 1 where as shown in Fig 8 the wood profile member of main frame bottom portion 21 may be provided with a recess 48 for accommodation of an electrical drive motor which in a manner known per se can operate a roller blind by means of a cord arrangement connected

to said bottom portion.

In connection herewith the main frame members may in their supply condition be provided with embedded wiring for which, as shown in Fig 2, grooves 49-50 can be provided in one of the surfaces of the main frame members which subsequently is covered by weather-resisting coverings.

In connection with such wiring a switch member can be provided in one of the main frame side portions for an electrical plug-and-socket connection for the drive motor of the Venetian blind 51, which as shown in Fig 1 can be mounted immediately below the main frame top portion 20.

In addition, the main frame bottom portion 21 as shown in Fig 1 and the right side portion 23 as shown in Fig 2 may be arranged for mounting of an accordion-folded insect screen 52 of a design known per se. Such a screen is fastened both to the main frame and the frame at the two side portions and at the bottom portion so that the openings between the main frame and the frame are completely screened.

The track 15 in the main frame formed by the glazing bead 13, otherwise used for mounting of the sealing strip 16, is used for mounting of the accordion-folded screen 52, as well as the projecting flange portions 46 of the profile members 45 of the frame, alternatively used for mounting of the fixed insect screen 43.

In order to facilitate mounting the accordion-folded insect screen 52 can be provided with fastening members 53, which can be clipped on said flange portions.

## Claims

1. A window comprising a frame of extruded profile members (1-4) which at their exterior side surfaces parallel to the glass plane have a first flange portion as a supporting member for an edge portion of a thermo pane (9) on an external side thereof, whereas an opposite edge portion at an inside of the thermo pane is supported by a glazing bead (13) connected with the profile member, and a main frame mainly consisting of wood profiles (20a-23a), the exterior surfaces of which are covered by weather-resisting coverings, a hinge member at the top of the window comprising a hinge pivot formed by an edge portion (28) of an extruded profile member (26) firmly connected to a main frame portion (20) at this side and a hinge blade formed by a hook-shaped wall portion (6) of an opposite frame profile member (1), means being provided to ensure engagement of said hinge pivot and said hinge blade in the closed position of the window, **characterized** in that the hinge blade forming wall portion (6) of the frame profile member comprises a flange part (29) of the upper exterior side wall of the frame profile member which projects downwards substantially parallel to the glass plane, whereas the hinge pivot

forming edge portion is formed by an upwards projecting oblique flange part (27) of said extruded profile member (26) which is connected with the upper side of the main frame member (20), said engagement ensuring means being provided solely at one of the sides of the window.

2. A window as claimed in claim 1, **characterized** in that said engagement ensuring means is provided at at least at one vertical sides of the window and comprises a member fastened to the frame profile and which in the closed position of the window is retained in a wood part of the frame profile.

3. A window as claimed in claim 2, **characterized** in that said member is a sliding block (32) arranged displaceably in a track (31) in the frame profile member, which block can be moved between a position opposite a retaining device (36) anchored in the main frame structure for permanently securing the frame in case of a fixed window and a position in which it can be connected to a motion transfer member (37) which is guided in a recess in the wood profile of the main frame for complete accommodation of the motion transfer member (37) in the closed position of an openable window.

4. A window as claimed in claim 3, **characterized** in that the motion transfer member is designed as a curved rack (37) in engagement with a toothed wheel (40) which is accommodated in said recess so as to be retained against turning in the closed position of the window.

5. A window as claimed in claim 4, **characterized** in that the distance of said toothed wheel (40) from the hinge member (28, 29) is smaller than the distance from the hinge member (28, 29) to the connection point between the sliding block and the motion transfer member (37).

6. A window as claimed in claim 4 or 5, **characterized** in that said rack (37) is toothed on the concave side and designed with such a curvature variation ( $R_1$ ,  $R_2$ ) that it does not project beyond the inside of the wood frame profile.

7. A window as claimed in any of the preceding claims, **characterized** in that extruded profile members (20c, 45) are fastened to the side of the main frame wood profiles facing the light admitting area of the window to form tracks (20b, 56) and projecting flange portions, respectively, for mounting and guiding of accessories such as, e.g. a roller blind (54), an insect screen (43, 52) and/or a Venetian blind (51).

8. A window as claimed in claim 7, **characterized** in

that the wood profile member of the main frame bottom (21) is provided with a recess (38) to accommodate at least one drive motor for said accessories.

9. A window as claimed in claim 5 and 8, **characterized** in that the main frame wood profiles are provided with factory-mounted wiring (49, 50) underneath the weather-resisting coverings for power supply to said drive motor or motors.

10. A window as claimed in claim 9, **characterized** in that in one of the frame portions said wiring is connected to a factory-mounted switch member for a plug-and-socket connection.

11. A window as claimed in any of the preceding claims, **characterized** in that the frame profile members are provided with flange portions (14) forming tracks (15) for sealing strips (16) for sealing engagement on parts of the weather-resisting main frame coverings and for insulation between these and the frame profile members.

12. A window as claimed in claim 11, **characterized** in that one of said flange portions (14) is formed by the glazing bead (13).

13. A window as claimed in claims 7 and 11, **characterized** in that at least one of said extruded profile members (45) on the main frame wood profiles and at least one of said flange portions of the frame profiles are arranged for alternative connection to fixing elements of an accordion-folded insect screen (52), which in an openable window is positioned between the side and bottom portions of the frame and the main frame.

14. A window as claimed in any of the preceding claims and designed as a roof window to be mounted in an inclined roof, **characterized** in that the coverings for weather-resistant connection between the main frame and the surrounding roofing material are retained between the main frame wood profile coverings or between these and the main frame wood profiles.

15. A window as claimed in claim 14, **characterized** in that the frame profiles are provided with flange portions (14) which form tracks (15) for sealing strips (16) for sealing engagement with parts of the weather-resisting main frame coverings for insulation between these and the frame profiles, at least one of said flange portions (14) and at least one of said extruded profile members (45) on the main frame wood profiles being arranged for alternative connection to fixing elements (53) of an accordion-folded insect screen (52), which in an openable window

is positioned between the side and bottom portions of the frame and main frame.

## Patentansprüche

1. Fenster umfassend einen Rahmen aus extrudierten Profilen (1-4), welche an deren mit der Glasfläche parallel verlaufenden äusseren Seitenoberflächen als Unterstützungselement eines Falzkantenstückes auf der Aussenseite einer Isolierverglasung (9) mit einem ersten Flanschteil versehen sind, wobei ein gegenüberliegendes Falzkantenstück auf der Innenseite der Isolierverglasung von einem mit dem Profil verbundenen Verglasungswulst (13) unterstützt ist, und einen im wesentlichen aus Holzprofilen (20a-23a) bestehenden Blendrahmen, dessen äussere Oberflächen von wetterbeständigen Verkleidungen gedeckt sind, eine sich am obersten Fensterteil befindliche Scharniervorrichtung, die ein Drehscharnier umfasst, das aus einem Falzkantenstück (28) eines extrudierten Profils (26) gebildet ist, welches mit einem sich auf dieser Seite befindlichen Blendrahmenteil (20) und einem von einem hakenförmigen Wandteil (6) eines gegenüberliegenden Rahmenprofils gebildeten Scharnierblech fest verbunden ist, wobei Eingriffssicherungsmittel dafür vorhanden sind, den Eingriff des erwähnten Drehscharniers und Scharnierbleches im geschlossenen Zustande des Fensters sicherzustellen, dadurch **gekennzeichnet**, dass der das Scharnierblech bildende Rahmenprofilwandteil (6) an der oberen Aussenseitenwand des Rahmenprofils einen Flanschteil (29) umfasst, welcher im wesentlichen parallel mit der Glasfläche nach unten herausragt, wogegen das vom Drehscharnier gebildete Falzkantenstück von einem nach oben herausragenden schrägen Flanschteil (27) des erwähnten extrudierten mit dem oberen Blendrahmen (20) verbundenen Profils (26) gebildet ist, indem die erwähnten Eingriffssicherungsmittel nur auf einer der Fensterseiten vorhanden sind.
2. Fenster nach Anspruch 1, dadurch **gekennzeichnet**, dass die erwähnte Eingriffssicherungsmittel an zumindest einer der vertikalen Fensterseiten vorhanden ist und ein am Rahmenprofil befestigtes Element umfasst, welches in der Schliessstellung des Fensters in einem Holzteil des Rahmenprofils festgehalten wird.
3. Fenster nach Anspruch 2, dadurch **gekennzeichnet**, dass das erwähnte Element ein in einer Spur (31) des Rahmenprofils verstellbar angebrachter Gleitkörper (32) ist, welcher zwischen einer Einstellungsgegenüber einer in der Blendrahmenkonstruktion verankerten Haltevorrichtung (36) zum dauerhaften Festhalten des Rahmens im Falle eines ge-

schlossenen Fensters, und einer Einstellung, in welcher das Element mit einem in einer Vertiefung des Blendrahmenholzprofils geleiteten Bewegungsübertragungselement (37) verbunden werden kann, wo das Bewegungsübertragungselement (37) in der Schliessstellung eines zu öffnenden Fensters völlig aufgenommen wird, beweglich ist.

4. Fenster nach Anspruch 3, dadurch **gekennzeichnet**, dass das Bewegungsübertragungselement als ein mit einem Zahnrad (40) eingreifenden bogenförmigen Hebel (37) ausgebildet ist, welcher in der erwähnten Vertiefung derart angebracht ist, dass das Drehen desselben in der Schliessstellung des Fensters verhindert wird.
5. Fenster nach Anspruch 4, dadurch **gekennzeichnet**, dass der Abstand des erwähnten Zahnrads (40) von der Scharniervorrichtung (28, 29) kleiner ist als der Abstand von der Scharniervorrichtung (28, 29) zum Verbindungspunkt zwischen dem Gleitkörper und dem Bewegungsübertragungselement (37).
6. Fenster nach Anspruch 4 oder 5, dadurch **gekennzeichnet**, dass der erwähnte Hebel (37) auf seiner konkaven Seite verzahnt ist und eine derartige Krümmungsvariation ( $R_1$ ,  $R_2$ ) ausweist, dass er über der Innenseite (122) des Holzrahmenprofils nicht herausragt.
7. Fenster nach einem der vorerwähnten Ansprüche, dadurch **gekennzeichnet**, dass die extrudierten Profile (20c, 45) zu der Holzprofilseite des der Fensterlichtöffnung zuwendenden Blendrahmens befestigt sind, so dass zur Montage und Steuerung von Zubehörteilen, wie z.B. einem Rollo (54), einem Fliegengitter (43, 52) und/oder einer Jalousie (51), Spuren (20b, 56) bzw. herausragende Flanschteile gebildet werden.
8. Fenster nach Anspruch 7, dadurch **gekennzeichnet**, dass das Holzprofil des Blendrahmenbodens (21) zwecks Einbau von zumindest einem Antriebsmotor für die erwähnten Zubehörteile mit einer Vertiefung (38) versehen ist.
9. Fenster nach Anspruch 9, dadurch **gekennzeichnet**, dass die Blendrahmenholzprofile für die Stromversorgung zum erwähnten Antriebsmotor bzw. zu den erwähnten Motoren unterhalb der wetterbeständigen Verkleidungen mit werksmontierter Verkabelung (49, 50) versehen sind.
10. Fenster nach Anspruch 9, dadurch **gekennzeichnet**, dass als Anschlussstelle die Verkabelung in einem der Rahmentteile mit einem werksmontierten Schalter verbunden ist.

11. Fenster nach einem der vorerwähnten Ansprüche, dadurch **gekennzeichnet**, dass die Rahmenprofile mit Flanschteilen (14) versehen sind, die Spuren (15) für Dichtungsleisten (16) zur teilweisen Abdichtung der wetterbeständigen Blendrahmenverkleidungen und Isolation zwischen denselben und den Rahmenprofilen bilden. 5
12. Fenster nach Anspruch 11, dadurch **gekennzeichnet**, dass einer der erwähnten Flanschteile (14) vom Verglasungswulst (13) gebildet wird. 10
13. Fenster nach Anspruch 7 und 11, dadurch **gekennzeichnet**, dass zumindest ein der erwähnten extrudierten Profile (45) der Blendrahmenholzprofile und zumindest ein der erwähnten Flanschteile der Rahmenprofile dafür vorgesehen ist, alternativ mit Befestigungselementen eines faltenbalgförmigen Fliegengitters (52) verbunden zu werden, wobei das Fliegengitter in einem zu öffnenden Fenster zwischen den Seiten- und Bodenteilen des Rahmens bzw. des Blendrahmens angebracht ist. 15 20
14. Fenster nach einem der vorerwähnten Ansprüche und als ein Dachfenster zur Montage in einer schrägen Wand ausgebildet, dadurch **gekennzeichnet**, dass die Verkleidungen zur wetterbeständigen Verbindung zwischen dem Blendrahmen und den umgebenden Bedachungsmaterialien zwischen den Holzprofilverkleidungen des Blendrahmens oder zwischen diesen und den Holzprofilen des Blendrahmens festgehalten werden. 25 30
15. Fenster nach Anspruch 14, dadurch **gekennzeichnet**, dass die Rahmenprofile mit Flanschteilen (14) versehen sind, welche Spuren (15) für Dichtungsleisten (16) zur teilweisen Abdichtung der wetterbeständigen Blendrahmenverkleidungen und zur Isolation zwischen den Blendrahmenverkleidungen und den Rahmenprofilen bilden, wobei zumindest ein der erwähnten Flanschteile (14) und zumindest ein der erwähnten extrudierten Profile (45) der Blendrahmenholzprofile dafür vorgesehen ist, alternativ mit den Befestigungselementen (53) des faltenbalgförmigen Fliegengitters (52) verbunden zu werden, wobei das Fliegengitter in einem zu öffnenden Fenster zwischen den Seiten- und Bodenteilen des Rahmens und des Blendrahmens angebracht ist, bilden. 35 40 45

## Revendications

1. Fenêtre à cadre constitué de profilés extrudés (1-4) qui à leur faces latérales et extérieures parallèlement au plan du vitrage présentent une première portion de rive comme un élément de support pour une section d'arête d'un vitrage à isolation thermi- 55

que (9) à un côté extérieur de celui-ci, tandis qu'une section d'arête opposée au côté intérieur du vitrage à isolation thermique est supportée par un rejet d'eau (13) relié au profilé, et d'un cadre fixe essentiellement composé de profilés en bois (20a-23a), dont les surfaces extérieures sont couvertes par des recouvrements (24) résistant aux intempéries, d'un élément de charnière à la partie supérieure de la fenêtre comprenant un pivot de charnière formé par une section d'arête (28) d'un profilé extrudé (26) fermement relié à une partie du cadre fixe (20) à ce côté et un battant de charnière formée par une partie de mur courbée (6) d'un profilé du cadre opposé (1), des moyens étant pourvus pour assurer engrenage dudit pivot de charnière et dudit battant de charnière dans la position fermée de la fenêtre **caractérisée** en ce que la partie de mur (6) formant le battant de charnière du profilé du cadre comprend une portion de rive (29) du mur latérale, supérieure et extérieure du profilé du cadre qui fait saillie vers le bas essentiellement parallèlement au plan de vitrage, tandis que la section d'arête formant le pivot de charnière est formée par une portion de rive oblique (27) faisant saillie vers le haut dudit profilé extrudé (26) qui est relié au côté supérieur de l'élément de cadre fixe (20), ledit moyen assurant l'engrenage n'étant pourvu qu'à l'un des côtes de la fenêtre.

2. Fenêtre selon la revendication 1, **caractérisée** en ce que ledit moyen assurant l'engrenage est pourvu au moins à l'un des côtés verticaux de la fenêtre et comprend un élément fixé au profilé du cadre et qui dans la position fermée de la fenêtre est retenu dans une portion en bois du profilé du cadre.
3. Fenêtre selon la revendication 2, **caractérisée** en ce que ledit élément est un bloc coulisseau (32) arrangé de manière à pouvoir se déplacer dans une voie (31) dans le profilé du cadre, ledit bloc peut être déplacé entre une position face à un dispositif de maintien (36) ancré dans la construction du cadre fixe pour maintien permanent du cadre d'une fenêtre fixe et une position dans laquelle il peut être relié à un transmetteur de mouvement (37) qui est guidé dans une coupe dans le profilé en bois du cadre fixe pour recevoir complètement le transmetteur de mouvement (37) dans la position fermée d'une fenêtre ouvrable. 50
4. Fenêtre selon la revendication 3, **caractérisée** en ce que le transmetteur de mouvement est conçu comme une crémaillère courbée (37) en engrenage avec une roue dentée (40) qui est reçue dans ladite coupe de manière à être retenue contre pivotement dans la position de la fenêtre.
5. Fenêtre selon la revendication 4, **caractérisée** en

ce que la distance de ladite roue dentée (40) depuis l'élément de charnière (28, 29) est inférieure à la distance de l'élément de charnière (28, 29) au point de jonction entre le bloc coulisseau et le transmetteur de mouvement (37).

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6. Fenêtre selon la revendication 4 ou 5, **caractérisée** en ce que ladite crémaillère (37) est endentée au côté concave et conçue avec une telle variation de sa courbe ( $R_1$ ,  $R_2$ ) qu'elle ne fait pas saillie en dehors du côté intérieur (122) du profilé en bois du cadre.

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7. Fenêtre selon l'une quelconque des revendications précédentes, **caractérisée** en ce que les profilés extrudés (20c, 45) sont fixés au côté des profilés en bois du cadre fixe face à la largeur du clair de vitre de la fenêtre pour former respectivement des voies (20b, 56) et des portions de charnières faisant saillie pour monter et guider des accessoires comme p.e. un store roulant (54), une moustiquaire (43, 52) et/ou un store vénitien (51).

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8. Fenêtre selon la revendication 7, **caractérisée** en ce que le profilé en bois de la partie inférieure du cadre fixe (21) est pourvu d'une coupe (38) pour recevoir au moins un moteur d'entraînement pour lesdits accessoires.

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9. Fenêtre selon les revendications 5 et 8, **caractérisée** en ce que les profilés en bois du cadre fixe sont pourvus d'un câblage monté en usine (49, 50) au-dessous des recouvrements résistant aux intempéries pour alimentation en courant audit moteur d'entraînement ou à des moteurs.

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10. Fenêtre selon la revendication 9, **caractérisée** en ce que dans une des parties du cadre, ledit câblage est relié à un commutateur monté en usine pour une prise de courant.

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11. Fenêtre selon l'une quelconque des revendications précédentes, **caractérisée** en ce que les profilés du cadre sont pourvus des portions de rive (14) formant des voies (15) pour des joints d'étanchéité (16) pour engrenage d'étanchéité sur des parties des recouvrements résistant aux intempéries du cadre fixe et pour isolation entre ceux-ci et les profilés du cadre.

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12. Fenêtre selon la revendication 11, **caractérisée** en ce que l'une des portions de rive (14) est formée par le rejet d'eau (13).

13. Fenêtre selon les revendications 7 et 11, **caractérisée** en ce qu'au moins l'un desdits profilés extrudés (45) sur les profilés en bois du cadre fixe et au moins l'une desdites portions de rive des profilés du

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cadre sont arrangés pour liaison alternative à des éléments de fixation d'une moustiquaire pliée à soufflets (52) qui dans une fenêtre ouvrable est placée entre les parties latérales et inférieures du cadre et du cadre fixe.

14. Fenêtre selon l'une quelconque des revendications précédentes et conçue comme une fenêtre de toit à monter dans un toit incliné, **caractérisée** en ce que les recouvrements destinés à liaison résistant aux intempéries entre le cadre fixe et les matériaux de revêtement de toiture environnants sont retenus entre les recouvrements des profilés en bois du cadre fixe ou entre ceux-ci et les profilés en bois du cadre fixe.

15. Fenêtre selon la revendication 14, **caractérisée** en ce que les profilés du cadre sont pourvus de portions de rive (14) qui forment des voies (15) pour des joints d'étanchéité (16) pour engrenage d'étanchéité avec des parties des recouvrements résistant aux intempéries du cadre fixe pour isolement entre ceux-ci et les profilés du cadre, au moins l'une desdites portions de rive (14) et au moins l'un desdits profilés extrudés (45) sur les profilés en bois du cadre fixe étant arrangés pour liaison alternative à des éléments de fixation (53) d'une moustiquaire pliée à soufflets (52) qui dans une fenêtre ouvrable est placée entre les portions latérales et inférieures du cadre et du cadre fixe.



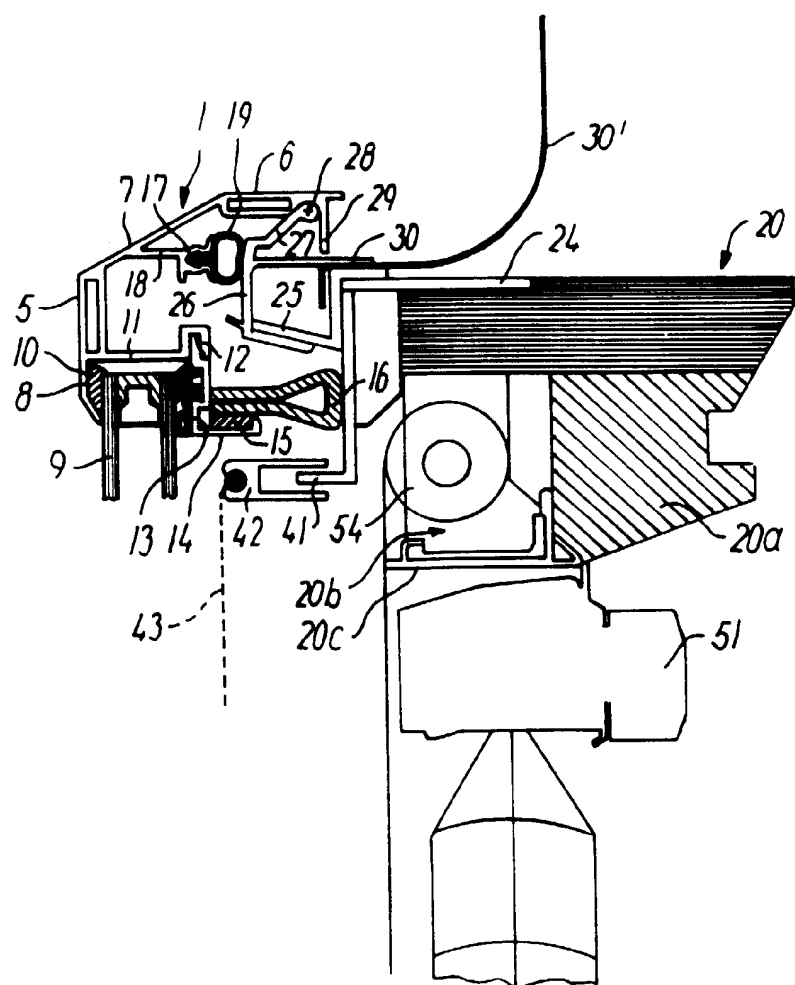


FIG. 1

